ABSTRACT

To provide an external preparation or injectable preparation that exerts the effect of enabling transdermal or transmucosal in vivo absorption of fat-soluble drugs and water-soluble drugs not having been satisfactorily attained hitherto and that contains a highly absorbable fat-soluble/water-soluble drug, the injectable preparation especially aiming at sustained-release and target effects.

In particular, drug-containing nanoparticles (secondary nanoparticles) are provided by causing primary nanoparticles containing a fat-soluble drug or fat-solubilized water-soluble drug to act with a bivalent or trivalent metal salt. Further, drug-containing nanoparticles (tertiary nanoparticles) are provided by first causing primary nanoparticles containing a fat-soluble drug or fat-solubilized water-soluble drug to act with a bivalent or trivalent metal salt to thereby obtain secondary nanoparticles and thereafter causing a monovalent to trivalent basic salt to act on the secondary nanoparticles. Still further, there are provided a process for producing these nanoparticles, and a transdermal or transmucosal external preparation or injectable preparation in which these nanoparticles are contained.